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TECHNOLOGY CENTER R3700

TITLE:

Integrated Decision Support System For
Optimizing The Training And Transition
Of Airline Pilots

CA105US

U.S. Filing Date:

November 13, 2001

Examiner:

Not Assigned

Assignee: CALEB Technologies Corp.

Art Unit:

2121

U.S. Patent Application Serial No.: 10/054,343

Inventors: Benjamin Glover Thengvall &
Julian Enrique Pachon

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MAR 28 2002

Technology Center 2100

Assistant Commissioner For Patents
U.S. Patent And Trademark Office
Washington, D.C. 20231

Dear Sir:

INFORMATION DISCLOSURE STATEMENT MEMORANDUM

Pursuant to 37 CFR § 1.97 and 1.98, Form PTO/SB/08A is enclosed for consideration in the examination and prosecution of this case. A copy of each document listed is enclosed.

No representation is made or intended that more relevant information does not exist, that the order of presentation of the enclosed materials represents order of importance or relevance, that any admissions of any kind is made with regard to the enclosed materials, or that any of the enclosed material is properly citable as prior art against this case.

Applicants respectfully submit that their invention is patentable over the enclosed and listed materials, which are summarized as follows:

U.S. Patents

1. U.S. Patent No. 6,076,067 teaches the decomposition of a vehicle origination and destination problem into a linear vehicle assignment model and a nonlinear network flow model. The nonlinear aspects of the targeted market are incorporated into the vehicle assignment model through use of linear approximations to a total revenue function.

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2. U.S. Patent No. 6,292,806B1 discloses a system and method which includes features for accessing and managing a database of aircraft technical information to support aircraft maintenance and repair assistance.

3. U.S. Patent No. 6,278,965B1 discloses a real time data management system using data generated at different rates to support aircraft surface operations.

4. U.S. Patent No. 6,275,812B1 discloses a system and method for training and transition of persons using skill templates and weightings.

5. U.S. Patent No. 6,275,767B1 discloses a method for implementing an air traffic service unit which links aircraft equipments, communication systems, and an operating system. Hooks method is used to filter operating system calls from airline operational communications.

6. U.S. Patent No. 6,263,315B1 discloses a method and system for supporting decisions to accept or deny requests for resource capacity by using control logic that accesses multi-dimensional lookup tables of price values for each resource.

7. U.S. Patent No. 6,240,362B1 discloses a method of scheduling a vehicle in real-time to transport freight and passengers through use of a host computer and freight/passenger terminals connected to a network, where arrival and departure times to each destination are estimated and updated as the vehicle travels.

8. U.S. Patent No. 6,161,097 discloses a system and method which receives data from multiple sources that is generated at different rates to provide real-time scheduling of the movement of plural surface vehicles.

9. U.S. Patent No. 6,078,912 discloses a computer system and method for determining and managing support resources of an object resource.

10. U.S. Patent No. 6,064,981 discloses a system and method for accepting or negotiating freight forwarder or carrier rates by way of the Internet.

11. U.S. Patent No. 5,794,224 discloses a network probabilistic resource allocation system and method which includes a low capacity computational module, and a self-organizing associative network, where nodes represent elementary resources, terminal end nodes represent goals, and weighted links represent the order of resource association in different allocation episodes.

12. U.S. Patent No. 5,450,317 discloses an automated system and method for recommending optimal order quantities and timing, choice of vendor locations and storage locations, and transportation modes for individual items and product families.

13. U.S. Patent No. 5,265,006 discloses a method and system for distributing planned and random orders with source and destination points in a predetermined geographic territory.

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Information Disclosure Statement Memorandum

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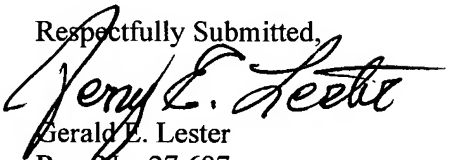
14. U.S. Patent No. 4,797,839 discloses a system and method which processes probability data to provide optimum allocation of resources among a series of demands.

Printed Publications

1. "Optimized Pilot Planning and Training at Continental Airlines", by Gang Yu, Benjamin Thengvall, Julian Pachon, Darryal Chandler, and Al Wilson, is a submission to INFORMS, for an Edelman Award (10/17/01). Benjamin Thengvall and Julian Pachon are the inventors of the present invention. While the submission provides a brief overview description of a decision support system which manages large volumes of data and employs state-of-the-art optimization modeling and solution techniques to allocate human and training resources to obtain optimal operational and financial performance, no disclosure of the current invention is provided.

2. "Decision Support Systems-An application in strategic manpower planning of airline pilots", by Peter J. Verbeek, European Journal of Operational Research, pages 368-381, Vol. 55 (1991), discusses a framework for designing a decision support system. While operations research equations for sub-problems such as allocation of flexible demand, determination of need for vacancies, and allocation of instruction tasks are provided, no mixed integer model for training and transition of pilots for an entire airline is provided. In fact, it is stated on page 378 that an attempt to produce such a mixed integer model failed for being too large for commercial solution.

Respectfully Submitted,



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| Substitute for form 1449A/PTO | | | | <div>Complete if Known</div> <div>Application Number 10/054,343</div> <div>Filing Date 11/13/01</div> <div>First Named Inventor Benjamin G. Thengvall</div> <div>Art Unit 2121</div> <div>Examiner Name Not Assigned</div> <div>Attorney Docket Number CAT0505</div> | |
| <div>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</div> <div>(use as many sheets as necessary)</div> | | | | | |
| Sheet | 1 | of | 2 | | |

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Complete if Known

| | |
|------------------------|-----------------------|
| Application Number | 10/054,343 |
| Filing Date | 11/13/01 |
| First Named Inventor | Benjamin G. Thengvall |
| Group Art Unit | 2121 |
| Examiner Name | Not Assigned |
| Attorney Docket Number | CA105US |

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

[illegible]

Examiner
Signature

Date
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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